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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/584,741	09/06/2006	Shigeru Tanaka	TIP-06-1177	5793

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EXAMINER

NELSON, MICHAEL B

ART UNIT	PAPER NUMBER
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1794

MAIL DATE	DELIVERY MODE
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02/09/2009

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/584,741	Applicant(s) TANAKA ET AL.	
	Examiner MICHAEL B. NELSON	Art Unit 1794	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-39 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-39 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 26 June 2006 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. ____. |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>09/06/06</u> . | 6) <input type="checkbox"/> Other: ____. |

DETAILED ACTION

Drawings

1. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they include the following reference character(s) not mentioned in the description: the arrows in Figs. 1, 2 and 5 are not mentioned in the specification. Corrected drawing sheets in compliance with 37 CFR 1.121(d), or amendment to the specification to add the reference character(s) in the description in compliance with 37 CFR 1.121(b) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 1-39 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

4. Claims 15 and 34 recite a "cushion factor", which renders the claim vague and indefinite in that it is unclear how the property is defined.

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5. Claims 1, 2, 3 and 8 are indefinite for claiming the invention in terms of physical properties rather than the chemical or structural features that produce said properties. *Ex parte Slob*, 157 USPQ 172, states, “Claims merely setting forth physical characteristics desired in an article, and not setting forth specific composition which would meet such characteristics, are invalid as vague, indefinite, and functional since they cover any conceivable combination of ingredients either presently existing or which might be discovered in the future and which would impart said desired characteristics.” Also, “it is necessary that the product be described with sufficient particularity that it can be identified so that one can determine what will and will not infringe.” *Benger Labs, Ltd v. R.K. Laros Co.*, 135 USPQ 11, *In re Bridgeford* 149 USPQ 55, *Locklin et al. v. Switzer Bros., Inc.*, 131 USPQ 294. Furthermore, “Reciting the physical and chemical characteristics of the claimed product will not suffice where it is not certain that a sufficient number of characteristics have been recited that the claim reads only on the particular compound which applicant has invented.” *Ex parte Siddiqui*, 156 USPQ 426, *Ex parte Davission et al.*, 133 USPQ 400, *Ex parte Fox*, 128 USPQ 157.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

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1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

8. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

9. Claims 1-39 are rejected under 35 U.S.C. 103(a) as being unpatentable over Asakura et al. (JP 03 187742), see English language translation, in view of Sadamitsu et al. (WO 02/066233), see U.S. 2004/0096744 as an English language equivalent.

Regarding claims 1, 2, 3, 8, 16, 37, 38 and 39, Asakura et al. discloses a biaxially oriented thermal transfer recording film (Page 8, last full paragraph and page 10 first full paragraph). The polypropylene containing core layer A (claim 1) of the laminate of Asakura et al. is sandwiched by skin layers, B, and laminated to a substrate with an adhesive layer C (page 13, first full paragraph). The substrate is disclosed as including an image receiving layer which is made up of a coating (Page 28, "Composition of the image-receiving layer"). This image receiving layer is identical to the layer disclosed in the instant specification at [0247] and since Asakura et al. discloses that his invention has high glossiness (Page 14, end of first paragraph), one having ordinary skill would expect the outer surface to exhibit the glossiness as instantly

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recited. Given that the "B" layer of Asakura et al. (Embodiments 1 and 2 of Table 1 on the last page and "Means of solving the problem" at Page 5) is substantially identical to the B layer composition disclosed at page 98 of the instant specification (i.e. @95% polypropylene and @5% PMP), one having ordinary skill would expect it to exhibit the claimed half crystallization time. The density of the film of Asakura et al. is disclosed as being between 0.75 g/cm³ or less (Page 9, second full paragraph).

Asakura et al. does not explicitly disclose a core layer (i.e. "A" layer) which meets the instant limitations; however, Sadamitsu et al. discloses a biaxially oriented porous (i.e. void containing) film which is improved in strength (i.e. breakage resistance) and thickness uniformity (See Abstract) and which can be used in synthetic paper ([0112]). The core layer of Sadamitsu et al. is disclosed as containing a polypropylene base, inter alia a polypropylene homopolymer ([0128]), and B-crystallization nucleators which impart B-crystal activity. The Table 1 at page 20 of Sadamitsu et al. shows that for example A the B-crystal ratio of the core layer is 72% and the porosity (i.e. void ratio) is 57%. The voids created in the film of Sadamitsu et al. are a result of the different crystalline states of polypropylene ([0002]) and are therefore non-nucleus voids in that there is no nucleating particle left in the void after it is stretched. Given that the Sadamitsu et al. core layer uses a homo-polypropylene at the same relative amount to the same nucleating agent ([0195]) as in the instant specification (Example 1, [0256]) the core layer would exhibit the claimed melting point.

The inventions of both Asakura et al. and Sadamitsu et al. are drawn to the field of porous polypropylene films for use in thermal transfer films (i.e. synthetic paper) and therefore it would have been obvious to one having ordinary skill in the art at the time of the invention to

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have modified the core layer of Asakura et al. by using the porous layer of Sadamitsu et al. for the purposes of imparting increased breakage resistance and thickness uniformity.

Modified Asakura et al. does not explicitly disclose the instantly claimed 2% elongation strengths (F2 value) however, one having ordinary skill in the art would have adjusted the thickness of the core and skin layers in order to provide a film with optimum balance of tensile strength and weight basis depending on the particular marketable application. Hence one having ordinary skill would have found it obvious to have produced the films of modified Asakura et al. with a variety of tensile strengths, including those instantly claimed.

Regarding claims 4-8, 9-15 and 17-36, modified Asakura et al. discloses all of the limitations as set forth above. Additionally, Asakura et al. discloses that the B skin layers include polypropylene (i.e. a polyolefin) (Embodiments 1 and 2 of Table 1 on the last page). The density of the film of Asakura et al. is disclosed as being between 0.75 g/cm³ or less (Page 9, second full paragraph). The surface roughness is disclosed as between 0.25 and 0.08 micrometers (Page 10, first full paragraph). Given that the "B" layer of Asakura et al. (Embodiments 1 and 2 of Table 1 on the last page and "Means of solving the problem" at Page 5) is substantially identical to the B layer composition disclosed at page 98 of the instant specification, one having ordinary skill would expect it to exhibit the claimed crystallization temperature and void ratios. The PMP is disclosed as being introduced as pellets (i.e. organic particles) in embodiments 1-5 of Asakura et al. (Page 22). The optical density is disclosed as being greater than 0.7 (Page 9, third full paragraph). Given that Titanium oxide is disclosed (Bottom of Page 12) and given that the film is disclosed as being laminated to paper (Page 12, second and third full paragraphs), one having ordinary skill in the art would expect the whiteness

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to be within the claimed ranges especially considering the application of the inventions for image receiving. The cushion rate is disclosed as being greater than 8% (forth paragraph on page 9).

An anchor layer, C, is disclosed as being between the B layer and the substrate layer (i.e. image receiving layer), and comprised of acryl based resins (first full paragraph of page 11).

Regarding the claimed thermal conductivity values, given the substantially similar layers and layer compositions of the film of modified Asakura et al. (i.e. the core layer of Sadamitsu et al. and the skin, adhesive, paper and coating layers of Asakura et al.) as stated above, one having ordinary skill in the art would expect the film of the prior art to exhibit these properties absent objective evidence to the contrary.

Conclusion

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to MICHAEL B. NELSON whose telephone number is (571) 270-3877. The examiner can normally be reached on Monday through Thursday 6AM-4:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Carol Chaney can be reached on (571) 272-1284. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/MN/

12/17/08

/Callie E. Shosho/

Supervisory Patent Examiner, Art Unit 1794